

Patent Claims:

1. Method for calculating the lateral force in a motor vehicle with an electromechanical or electrohydraulic steering system, the said method comprising the following steps:
 - recording a steering rod force (F_L);
 - calculating a total restoring torque (M_Z) from the steering rod force, with the said restoring torque comprising a restoring torque ($M_{Z,Y}$) generated by lateral force (F_Y) and other restoring torques ($M_{Z,B}$, $M_{Z,R}$, $M_{Z,A}$, $M_{Z,z1}$, $M_{Z,z2}$);
 - quantitative determination of the other restoring torques based on measured values;
 - subtracting the other restoring torques from the total restoring torque for determining the restoring torque generated by the lateral force; and
 - determining the lateral force (F_Y) from the restoring torque ($M_{Z,Y}$) generated by the lateral force.
2. Method as claimed in claim 1,
c h a r a c t e r i z e d in that a transmission ratio (i_{L2}) between the steering rod force (F_L) and the total restoring torque (M_Z) is included in the determination of the lateral force.
3. Method as claimed in claim 2,
c h a r a c t e r i z e d in that the transmission ratio ($i_{L2}(\delta)$) is responsive to the steering angle.

4. Method as claimed in claim 1,
c h a r a c t e r i z e d in that a kingpin
inclination (σ) and/or a caster angle (τ) is included
in the determination of the lateral force (F_Y).
5. Method as claimed in claim 1,
c h a r a c t e r i z e d in that the other restoring
torques comprise a restoring torque ($M_{Z,R}$, $M_{Z,B}$, $M_{Z,A}$, $M_{Z,z1}$,
 $M_{Z,z2}$) generated by rolling resistance (F_R), brake force
(F_B), driving power (F_A), and/or by vertical force.
6. Method as claimed in claim 1,
c h a r a c t e r i z e d in that the steering rod
force is detected as a force that acts on the left and
right steering tie rod or as the total steering rod
force (F_L).
7. Method as claimed in claim 1,
c h a r a c t e r i z e d in that the total steering
rod force (F_L) is calculated from a steering torque (M_L)
generated by the driver, a steering amplification (V_L),
and a steering ratio (i_{L1}).
8. Method as claimed in claim 7,
c h a r a c t e r i z e d in that a steering-angle-
responsive steering ratio ($i_{L1}(\delta)$) enters into the
calculation of the steering rod force (F_L).
9. Method as claimed in claim 1,
c h a r a c t e r i z e d in that the total steering
rod force is determined from the motor current and/or
the motor position of one or more electric motors (8)

of the electromechanical or electrohydraulic steering system.

10. Method as claimed in claim 1,
c h a r a c t e r i z e d in that a sideslip angle is determined from the determined lateral force (F_Y).
11. Method as claimed in claim 1,
c h a r a c t e r i z e d in that a coefficient of friction is determined from the determined lateral force (F_Y).